CHAPTER 10

MUNICIPAL SOLID WASTE MANAGEMENT PROFILE

Current Solid Waste Management(1/5) LGU : Manila

1. General Information

	NSO	MMUTIS
Area (km2)	38.6	33.7
Population	1,655,000	1,654,761
Population Density(person ('000)/km2)	42.9	49.1
Annual Growth Rate (% p.a.) 1980-1995	0.1	0.1
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)			x	
Collection (Market, Commercial)			x	
Transportation			x	
Street Sweeping		x	x	
River Cleansing	x	x		
Maintenance		x	x	
Operation of Individual T.S.			x	

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	1,129.58 ton / day
Waste Collection Amount (ton/day)	706.39 ton / day
Coverage Rate (%)	62.54 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door	x	x	x	x
Curve	x			
Station				
Bell	x			
Container				
Primary				

■ Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA,LGU and /or Private Contractor

MANILA	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								Total
			Compactor					Dump-Truck			
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	0	-	2					2	1		5
Contractor	100	1	9	24			66	5	124		228
Total	100	1	11	24			66	7	125		233

Current Solid Waste Management(2/5) LGU: Manila

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
Private	←				→

■ Collection Frequency

Residential Area	Twice-Three times a week
Commercial Area	Daily
Market	Daily

3) Contract Out System

Type of Contract	Package Deal
Term of Contract	every six months
Responsible Sector for Selection of Contractor	City Council
Specification	Exist
Estimation Method of Contract Cost	
Contract System	Negotiation

4) Supervision / Management System to Collection Work

Waste Volume Check System	No use trip ticket because of package deal system Private contractors : Volume check & Dispach LGU : Monitoring *Issue of a trip ticket → Collection → Volume check → Disposal site → *
Monitoring System to Collection activity	Monitoring system on the volume of garbage generated and collected and collection activity

4. Haulage and Transfer System

Type of Haulage system	Indirect haulage system by T.S.
Type of Transfer System	Operation of a temporary holding station at Pier 2, North harbor where collected garbage from all over Manila are loaded in a forty-footed van/s for transport to annd disposal at Carmona S.L.S. and/or San Mateo S.L.S

5. Maintenance System for Vehicle and Equipment

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU	x		
Private Contractors		x	

Current Solid Waste Management(3/5) LGU: Manila

6. Public Cleansing

1) Street Sweeping

	Roxas Blvd. and Malacaniang vicinity	Other rest street	Total
Role Assignment	MMDA	Private Contractor	-
Total Length(km)			934.1
Swept Length (km)			261.5
Sweeping System	Mechanical	Manual	-
Frequency	Daily	Twice a day(6days)	-
Working Time	7hrs.	7	-
Monitoring System	12hrs.	6 monitoring team (5person/team)	-
Heaping Point & Container		by buggy	-

2) River Cleansing

	River	Creek	Total
Role Assignment	LGU assists DPWH in hauling and disposal of garbage		
Total Length(km)	12	27	39
Cleansing Length (km)	As per request of the MMDA, DENR, DRWH		
Cleansing System	Manual by using boat		
Frequency	Upon request of MMDA, DENR and DPWH		
Working Time	7 hrs. / day		
Monitoring System			
Heaping Point & Container and	River side Heaping points : 30 points		

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
Carmona S.L.S.	492
San Mateo S.L.S.	206
Total	698

* Disposal amount is estimated based on the disposal volume data accumulated by MMDA.

9. Recycling Activity

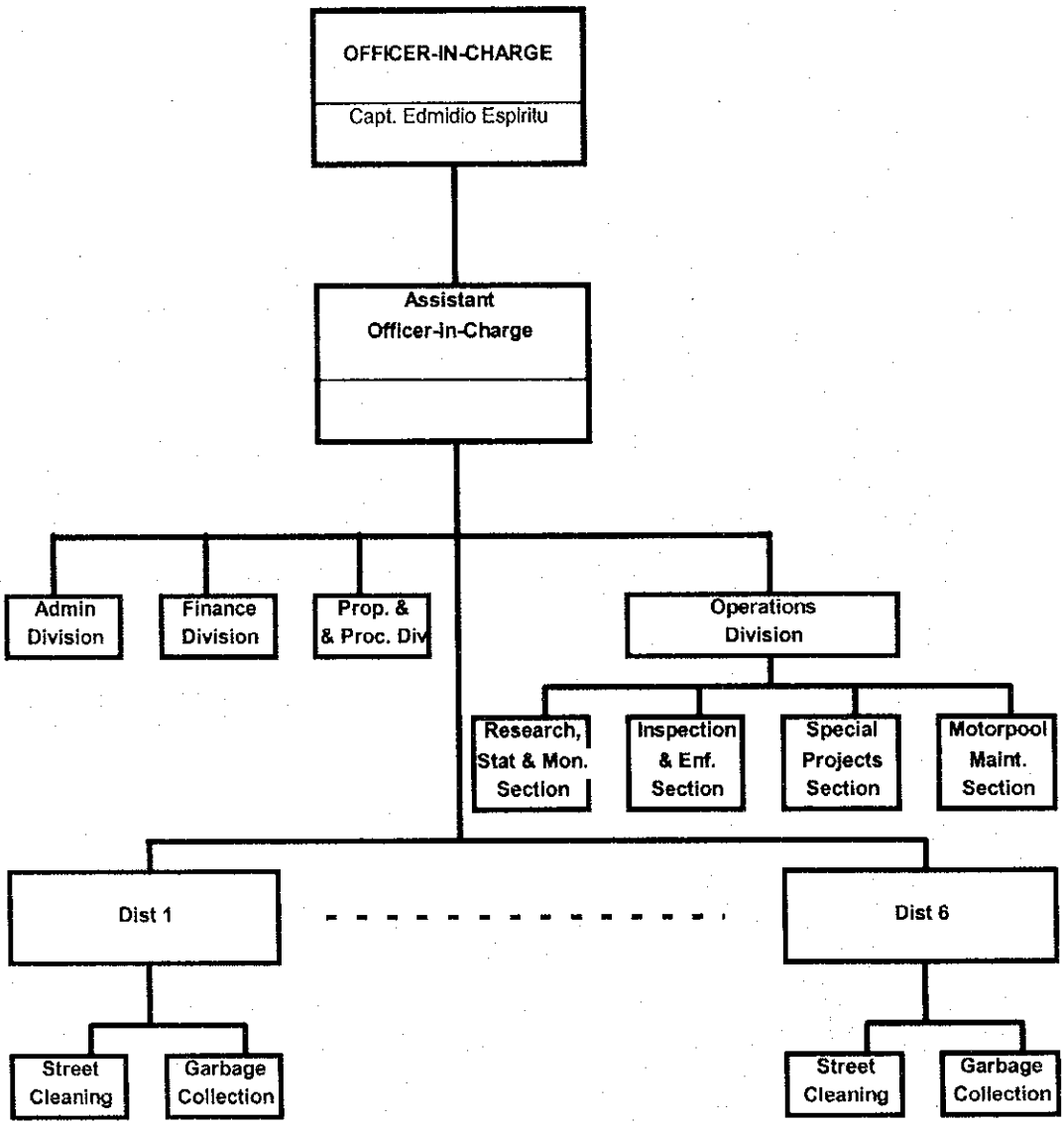
Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

private owned recycling Paper, plastic through eco-aid and other private buyers.

10. Organization

1) Organization chart

DEPARTMENT OF PUBLIC SERVICES
CITY OF MANILA



Current Solid Waste Management(5/5) LGU : Manila

2) No. of Personnel

MANILA	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	8	23									20	51
Operation/ Regular	2		18	14							2	36
Collection												
Beatification								189				189
Depot/maint/ Motorpool									2	1		3
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	10	23	18	14				189	2	1	22	279

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Quezon

1. General Information

	NSO	MMUTIS
Area (km2)	161.1	170.6
Population	1,989,000	1,989,419
Population Density(person ('000)/km2)	12.3	11.7
Annual Growth Rate (% p.a.) 1980-1995	3.6	3.6
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)		x	x	
Collection (Market, Commercial)		x	x	
Transportation		x	x	
Street Sweeping	x	x		
River Cleansing	x	x		x
Maintenance			x	
Operation of individual T.S.				

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	928.00 ton /day
Waste Collection Amount (ton/day)	773.42 ton / day
Coverage Rate (%)	83.34 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door	x			
Curve		x		x
Station			x	
Bell	x			
Container				
Primary				

■ Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA,LGU and /or Private Contractor

QUEZON	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								
			Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	0	-		5						1	6
Contractor	100	8	3	2	2		15	59	186	11	278
Total	100	8	3	7	2		15	59	186	12	284

Current Solid Waste Management(2/4) LGU : Quezon

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
Main thoroughfare	4 ◄——► 8				
Mopping Collection		8 ◄——————► 16			
Barangay		7 ◄——————————►		17	

■ Collection Frequency

Main Thoroughfare (Commercial)	Daily
Barangay	3 times a week
Market	Daily

3) Contract Out System

Type of Contract	Package Deal (major contract), Per Trip (support contract)
Term of Contract	90 days
Responsible Sector for Selection of Contractor	PBAC (Public Bidding and Awards Committee)
Specification	Exist
Estimation Method of Contract Cost	
Contract System	1. Publish invitation to bid 2. Pre-qualification / Accreditation 3. Inspection of units & facilities 4. Preparation of Government estimation 5. Bidding 6. Awarding of contracts to winners

4) Supervision / Management System to Collection Work

Waste Volume Check System	No use trip ticket because of package deal system Private contractors : Volume check & Dispach LGU : Monitoring *Issue of a trip ticket (Area Offices) ⟶ Collection ⟶ Volume check (Area Offices) ⟶ Disposal site ⟶ *
Monitoring System to Collection activity	1. Field Monitoring by Barangay stuffs & monitoring stuff 2. Phoned-in-reports 3. Dispatch reports based on trip tickets 4. Volume checking at dump site

4. Haulage and Transfer System

Type of Haulage system	Direct haulage system to disposal site
Type of Transfer System	N/A

5. Maintenance System for Vehicle and Equipment

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU			x
Private Contractors			4 contractors

Current Solid Waste Management(3/4) LGU : Quezon

6. Public Cleansing

1) Street Sweeping

	Main Thoroughfare	Secondary Road	Total
Role Assignment	MMDA , LGU & NGO volunteers	LGU	-
Total Length(km)	131.54	268	399.54
Swept Length (km)			240
Sweeping System	Mechanical / Manual	Manual	-
Frequency	Daily	Daily	-
Working Time	MMDA, LGU sweepers : 8 hrs., NGO volunteers : 5hrs. (6AM-9AM, 4PM-6PM)		
Monitoring System	Daily monitoring by foremens		
Heaping Point & Container	1. trash bins (180 cc) deployed at selected areas 2. designated heaping point 3. kerosene cans or baskets		

2) River Cleansing

	River	Main Creek	Total
Role Assignment	Coordination among MMDA, DPWH and QC engineering office for scheduling of river cleansing		
Total Length(km)	39.2	68.95	108.2
Cleansing Length (km)	39.2	68.95	108.2
Cleansing System	combination of manual and equipment like dredging machine & sewer jet		
Frequency	upon request		
Working Time	irregular		
Monitoring System	based on report of accomplishments		
Heaping Point & Container and	River banks Sacks or sometimes loaded directly to collection trucks		

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
Payatas	743 ton / day
San Mateo	13 ton / day

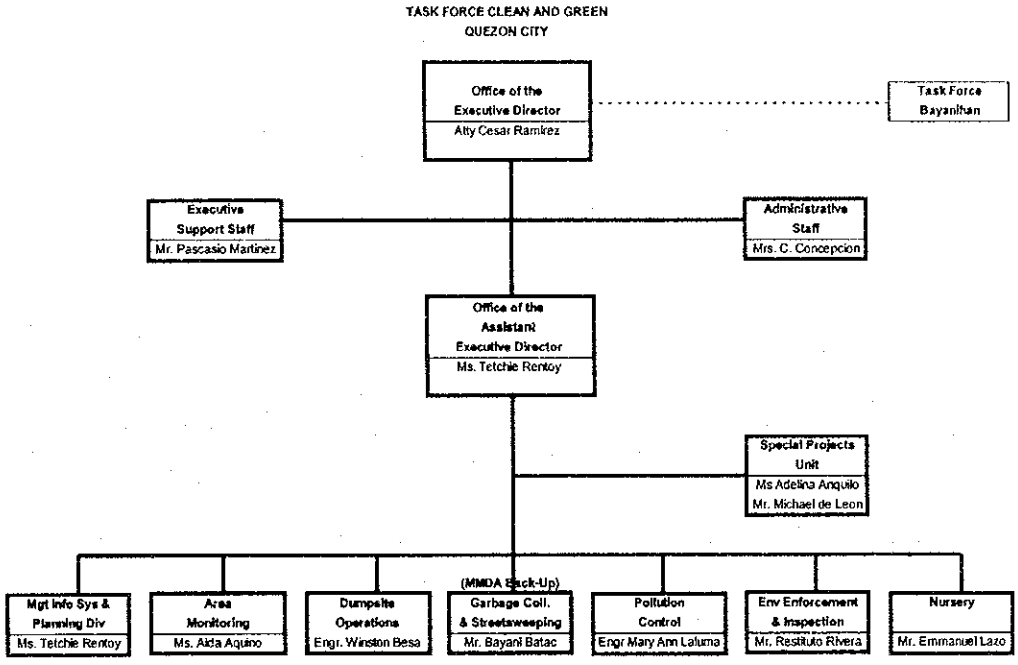
- Disposal amount is estimated based on the disposal amount observed by incoming survey.

9. Recycling Activity

Community Base	waste segregation undertaken at household level
Baranbay Base	
Municipality Base	N/A

10. Organization

1) Organization chart



2) No. of Personnel

QUEZON CITY	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	11	23									14	48
Operation/ Regular	1		28	58							11	98
Collection						15						15
Beatification								32			82	114
Depot/maint/ Motorpool												
Transfer Station												
Dumpsite/ Operation		15	1									16
MMDA back up	1	14	5	5		100	291	100		8		524
Special Project/ Operations		10	20	5						3	56	94
Total	13	62	54	68		115	291	132		11	163	909

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Caloocan

1. General Information

	NSO	MMUTIS
Area (km2)	53.5	50.7
Population	1,023,000	1,023,159
Population Density(person ('000)/km2)	19.2	20.2
Annual Growth Rate (% p.a.) 1980-1995	5.4	5.4
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I/R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)			x	
Collection (Market, Commercial)			x	
Transportation			x	
Street Sweeping		x		
River Cleansing		x		
Maintenance			x	
Operation of Individual T.S.			x	

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	432.41
Waste Collection Amount (ton/day)	161.42
Coverage Rate (%)	37.33

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door		x		
Curve				
Station			x	
Bell	x			x
Container				
Primary				

■ Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA, LGU and /or Private Contractor

CALOOCAN	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								
			Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	2	-				3					3
Contractor	98	7						5	54	45	104
Total	100	7				3		5	54	45	107

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
Private	4 ◄——► 8		14 ◄——► 20		

■ Collection Frequency

Main Thoroughfare	Daily
Barangay	Every other day
Market	Daily

3) Contract Out System

Type of Contract	Package Deal
Term of Contract	One year
Responsible Sector for Selection of Contractor	Environmental Sanitation Services (ESS)
Specification	Exist
Estimation Method of Contract Cost	1,900pesos/trip(10W-D), 1,475pesos/trip(6W-D), 1,175pesos/trip(Mini-D)
Contract System	1. An invitation to pre-qualify and bid or submit quotation. 2. Pre-qualification documents are evaluated by the City's Bids and Awards Committee (PBAC). 3. Inspection & Verification of trucks and garage by SWMD Personnel. 4. A qualified contractor is subject to inspection of registration documents, motorpool or garage and visual inspection of units by SWMD personnel.

4) Supervision / Management System to Collection Work

Waste Volume Check System	No use trip ticket because of package deal system Private contractors : Volume check & Dispach LGU : Monitoring
Monitoring System to Collection activity	By monitoring team 6 Monitoring teams(1 team 25personnel by each areas)

4. Haulage and Transfer System

Type of Haulage system	Direct haulage system () & indirect haulage system by T.S.
Type of Transfer System	Collective transfer system (Las Pinas T.S.) & individual transfer system by payloader

5. Maintenance System for Vehicle and Equipment

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU			x
Private Contractors	1 contractor	4 contractors	2 contractors

Current Solid Waste Management(3/4) LGU : Caloocan

6. Public Cleansing

1) Street Sweeping

	Main Thoroughfare	Interior	Total
Role Assignment	LGU?	LGU	-
Total Length(km)			
Swept Length (km)			438.2
Sweeping System	Mechanical(1)	Manual	-
Frequency	Daily	Daily	-
Working Time	5:00AM-9:00PM	6:00AM-2:00PM 11:00AM-7:00PM	-
Monitoring System	by foreman		
Heaping Point & Container	-	Road side with plastic bag	-

2) River Cleansing

	River & Creek
Role Assignment	Engineering Department
Total Length(km)	10
Cleansing Length (km)	10
Cleansing System	by backhoo
Frequency	upon request
Working Time	irregular
Monitoring System	Based on report of accomplishments
Heaping Point & Container and	River Side without container After two days of cleansing, waste is collected by private collection vehicle.

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
Payatas	42 ton / day
San Mateo	117 ton / day

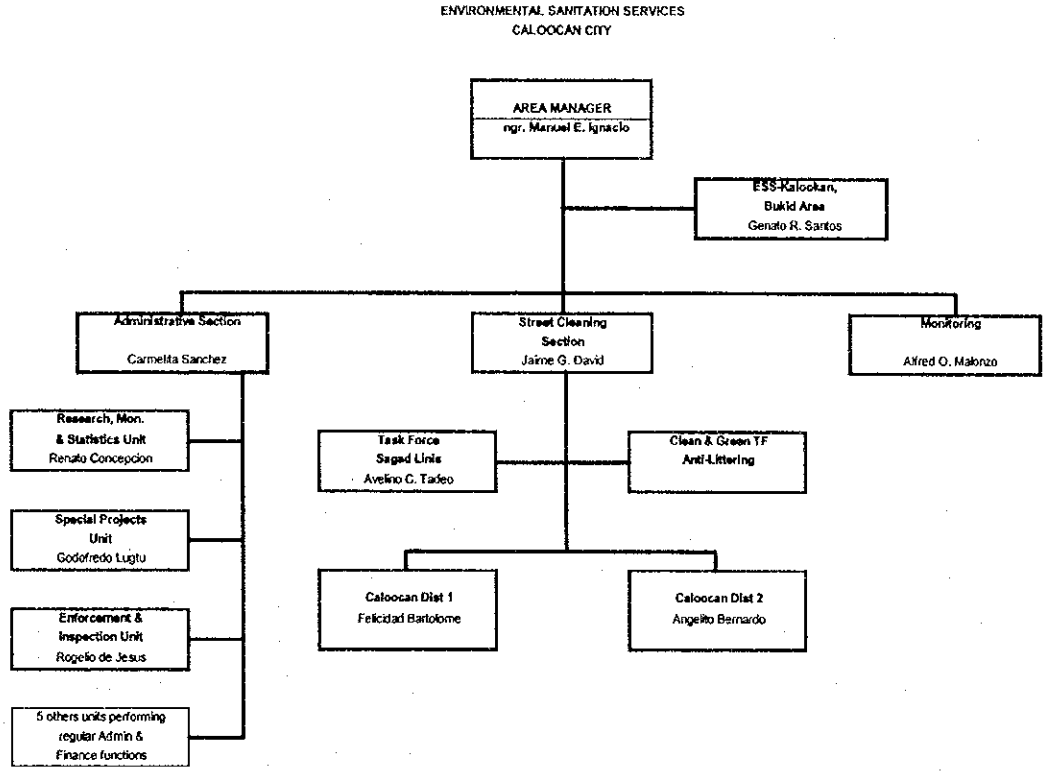
Disposal amount is estimated based on the disposal volume obtained by incoming survey.

9. Recycling Activity

Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

10. Organization

1) Organization chart



2) No. of Personnel

CALOOCAN	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	2	12										14
Operation/ Regular			6									6
Collection												
Beatification												
Depot/maint/ Motorpool												
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	2	12	6									20

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Navotas

1. General Information

	NSO	MMUTIS
Area (km2)	10.8	10.8
Population	229,000	229,039
Population Density(person ('000)/km2)	21.2	21.2
Annual Growth Rate (% p.a.) 1980-1995	2.4	2.4
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)		x	x	
Collection (Market, Commercial)			x	
Transportation		x		
Street Sweeping		x		
River Cleansing				
Maintenance		x		
Operation of Individual T.S.		x		

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	100 .16 ton /day
Waste Collection Amount (ton/day)	39.62 ton / day
Coverage Rate (%)	39.56 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door				
Curve	x	x		x
Station			x	x
Bell	x	x		x
Container				
Primary				

■ Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA, LGU and /or Private Contractor

NAVOTAS	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								
			Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	26	-						3	1	10	14
Contractor	74	1							10		10
Total	100	1						3	11	10	24

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
1st shift	4:00 ◄	———	► 12:00		
2nd shift				20 ◄	——— ►

■ Collection Frequency

Residential Area	
Commercial Area	
Market	

3) **Contract Out System**

Type of Contract	per trip
Term of Contract	
Responsible Sector for Selection of Contractor	Mayor's office
Specification	
Estimation Method of Contract Cost	
Contract System	

4) **Supervision / Management System to Collection Work**

Waste Volume Check System	using trip ticket
Monitoring System to Collection activity	

4. **Haulage and Transfer System**

Type of Haulage system	indirect haulage system (Las pinas T.S. / temporary T.S.)
Type of Transfer System	waste is transferred to a mini dump truck or a 6 wheeler dump truck with the held of a truck crane.

5. **Maintenance System for Vehicle and Equipment**

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU	x		
Private Contractors		x	x

Current Solid Waste Management(3/4) LGU : Navotas

6. Public Cleansing

1) Street Sweeping

	National Road
Role Assignment	
Total Length(km)	
Swept Length (km)	31.4
Sweeping System	Manual
Frequency	Daily except sunday
Working Time	5:00 - 12:00(Saturday to 10:00)
Monitoring System	
Heaping Point & Container	

2) River Cleansing

	Main River
Role Assignment	
Total Length(km)	
Cleansing Length (km)	5.0
Cleansing System	by boat
Frequency	occasionally
Working Time	
Monitoring System	
Heaping Point & Container and	

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
San Mateo	30.0
Carmona	9.0

Disposal amount is estimated based on the disposal volume obtained by incoming survey.

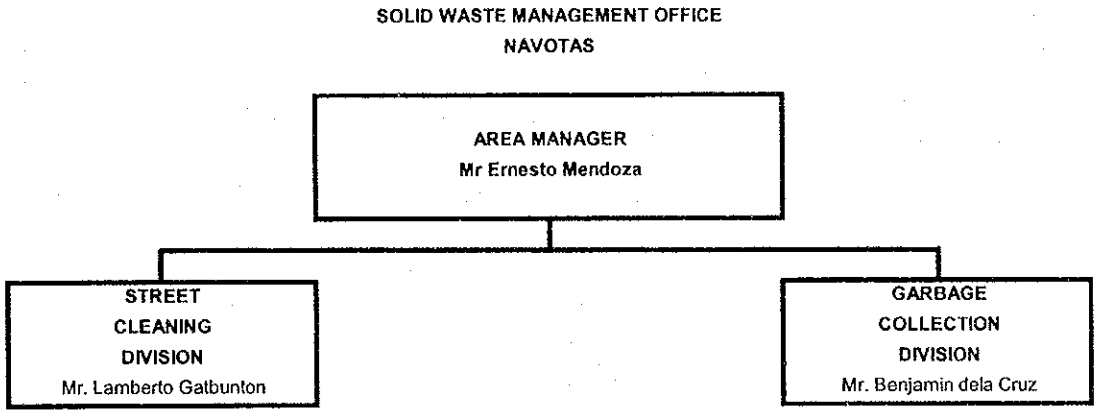
9. Recycling Activity

Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

Current Solid Waste Management(4/4) LGU : Navotas

10. Organization

1) Organization chart



2) No. of Personnel

NAVOTAS	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	1											1
Operation/ Regular			4									4
Collection					15	20						35
Beatification												
Depot/maint/ Motorpool										2		2
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	1		4		15	20				2		42

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Valenzuela

1. General Information

	NSO	MMUTIS
Area (km2)	44.6	44.5
Population	437,000	437,165
Population Density(person ('000)/km2)	9.8	9.8
Annual Growth Rate (% p.a.) 1980-1995	2.4	2.4
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office, I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)			x	
Collection (Market, Commercial)			x	
Transportation				
Street Sweeping	x			
River Cleansing				
Maintenance			x	
Operation of Individual T.S.			x	

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	191.11 ton / day
Waste Collection Amount (ton/day)	149.08 ton / day
Coverage Rate (%)	78.01 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door				
Curve	x	x		x
Station			x	
Bell	x	x		x
Container				
Primary				

■ Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA, LGU and /or Private Contractor

VALENZUEL	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								
			Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	0	-									-
Contractor	100	1							10	18	28
Total	100	1							10	18	28

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
1st Trip	3:00 ◄	———	► 12:00		
2nd Trip				19 ◄	——— ►

■ Collection Frequency

Residential Area	
Commercial Area	
Market	

3) **Contract Out System**

Type of Contract	per trip
Term of Contract	Continuous
Responsible Sector for Selection of Contractor	Solid Waste Management Office
Specification	None
Estimation Method of Contract Cost	None
Contract System	None

4) **Supervision / Management System to Collection Work**

Waste Volume Check System	
Monitoring System to Collection activity	

4. **Haulage and Transfer System**

Type of Haulage system	Indirect haulage system
Type of Transfer System	Waste is manually transferred from a mini dump truck to a 10 wheeler dump truck.

5. **Maintenance System for Vehicle and Equipment**

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU	x		
Private Contractors		x	x

Current Solid Waste Management(3/4) LGU : Valenzuela

6. Public Cleansing

1) Street Sweeping

	Main Road
Role Assignment	MMDA
Total Length(km)	
Swept Length (km)	10.0
Sweeping System	Manual
Frequency	Three times a week
Working Time	8 hours
Monitoring System	MMDA
Heaping Point & Container	Trash cans

2) River Cleansing

	Main River
Role Assignment	MMDA and LGU
Total Length(km)	
Cleansing Length (km)	15.0
Cleansing System	Manual
Frequency	occasionally
Working Time	8 hours
Monitoring System	8 hours
Heaping Point & Container and	Trash can

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
Payatas	148 ton /day

Disposal amount is estimated based on the disposal volume obtained by incoming survey.

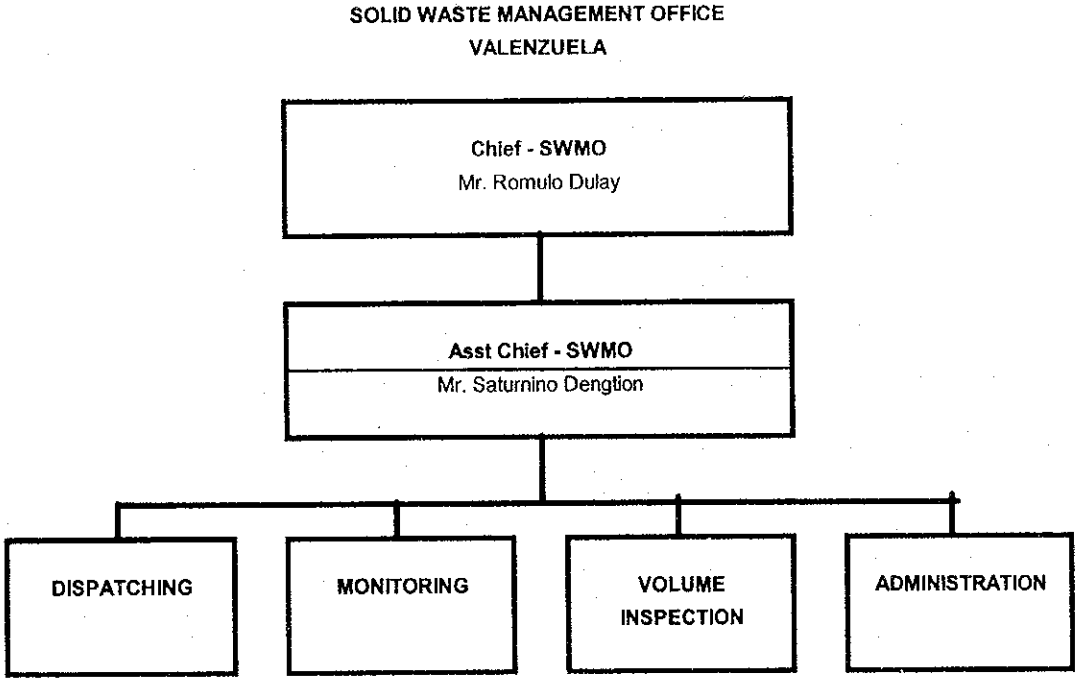
9. Recycling Activity

Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

Current Solid Waste Management(4/4) LGU: Valenzuela

10. Organization

1) Organization chart



2) No. of Personnel

VALENZUELA	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	1	2										3
Operation/ Regular	1			6								7
Collection												
Beatification												
Depot/maint/ Motorpool										2		2
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	2	2		6						2		12

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Malabon

1. General Information

	NSO	MMUTIS
Area (km2)	15.8	32.1
Population	347,000	347,484
Population Density(person ('000)/km2)	22.0	10.8
Annual Growth Rate (% p.a.) 1980-1995	4.1	4.1
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)		x	x	
Collection (Market, Commercial)		x	x	
Transportation				
Street Sweeping		x		
River Cleansing		x		
Maintenance		x		
Operation of Individual T.S.				

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	153.04 ton / day
Waste Collection Amount (ton/day)	95.82 ton / day
Coverage Rate (%)	62.61 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door	x			
Curve				
Station				
Bell				
Container	x	x	x	
Primary	x	x	x	x

■ Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA, LGU and /or Private Contractor

MALABON	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								
			Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	24	-						4	1	2	7
Contractor	76	2	1	3				21			25
Total	100	2	1	3				25	1	2	32

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
Private	2 ← → 7 ← → 11				
Private	→ 5				21 ←
Private	5 ← → 13				

■ Collection Frequency

Residential Area	
Commercial Area	
Market	

3) **Contract Out System**

Type of Contract	Per Trip
Term of Contract	One Year
Responsible Sector for Selection of Contractor	PBAC (Public Bidding Accreditation Committee)
Specification	Exist
Estimation Method of Contract Cost	Technical evaluation of the estimation ?
Contract System	1. Publish invitation to bid 2. Pre-qualification / Accreditation 3. Inspection of units & facilities 4. Preparation of Government estimation 5. Bidding 6. Awarding of contracts to winners

4) **Supervision / Management System to Collection Work**

Waste Volume Check System	*Issue of a trip ticket (Area Offices) → Collection → Volume check (Area Offices) → Disposal site → *
Monitoring System to Collection activity	

4. **Haulage and Transfer System**

Type of Haulage system	Direct haulage system to disposal site (Catmon) .
Type of Transfer System	N/A

5. **Maintenance System for Vehicle and Equipment**

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU			x
Private Contractors		2 contractors	

Current Solid Waste Management(3/4) LGU : Malabon

6. Public Cleansing

1) Street Sweeping

	Main Thoroughfare
Role Assignment	LGU
Total Length(km)	
Swept Length (km)	10.8
Sweeping System	Manual
Frequency	Daily
Working Time	5:00AM - 2:00PM
Monitoring System	2monitorring officers assigned per district
Heaping Point & Container	Container with garbage bag

2) River Cleansing

	Main River (Tonsuya river)
Role Assignment	LGU
Total Length(km)	26.9
Cleansing Length (km)	20.0
Cleansing System	Manual by boat
Frequency	
Working Time	8hrs. (7:00AM-11:00AM, 3:00PM-6:00PM
Monitoring System	1 monitoring officer
Heaping Point & Container and	garbage bag and bif basket (tiklis) used to fetched floaters / waste from the river. Unloading of garbage directly at dumptruck

7. Intermediate Treatment

Type of Facility	Treatment System
Recycling plant	The recycling plant for paper and warehouse (Santulan)
Shredding Machine	Used by nursery plant to shred compostable material

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
Catmon	95

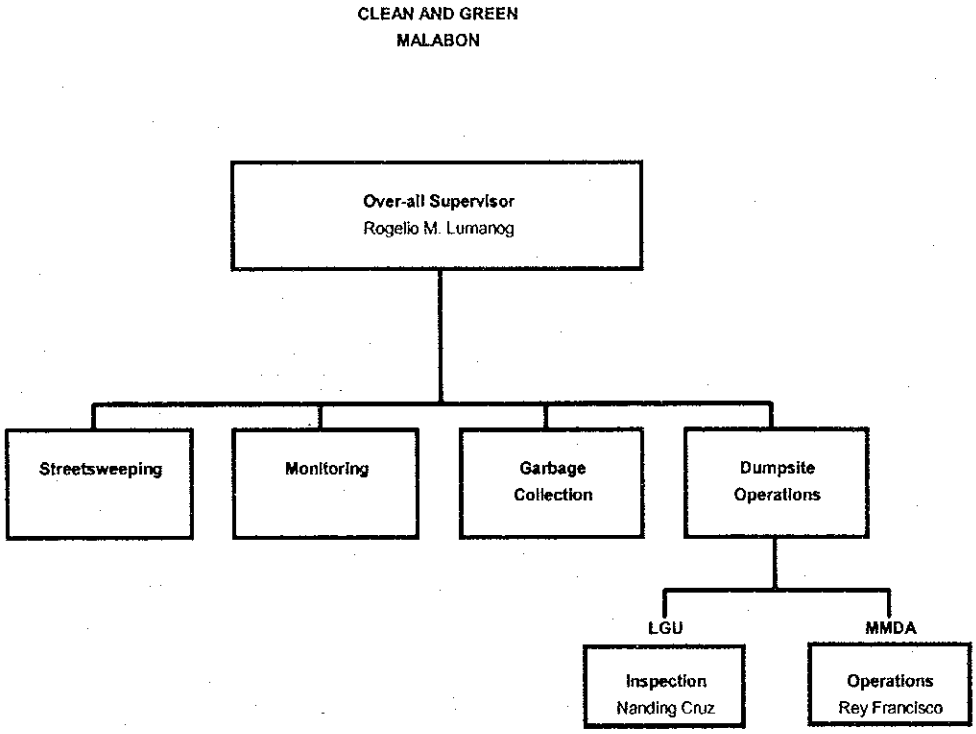
Disposal amount is estimated based on the disposal volume obtained by incoming survey.

9. Recycling Activity

Community Base	
Baranbay Base	Bgy. Ibaba, Acacia, Tugatog and Potrero
Municipality Base	Public Market

10. Organization

1) Organization chart



2) No. of Personnel

MALABON	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	2	3										5
Operation/ Regular			5	2								7
Collection					8	24						32
Beatification								41				41
Depot/maint/ Motorpool												
Transfer Station												
Dumpsite/ Operation		3	1				4					8
MMDA back up	1	3	1				2					7
Special Project/ Operations												
Total	3	9	7	2	8	24	6	41				100

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Marikina

1. General Information

	NSO	MMUTIS
Area (km2)	34	34
Population	357,000	357,231
Population Density(person ('000)/km2)	10.5	10.5
Annual Growth Rate (% p.a.) 1980-1995	2.4	2.4
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)		x		
Collection (Market, Commercial)		x		
Transportation		x		
Street Sweeping		x		
River Cleansing		x		
Maintenance		x		
Operation of Individual T.S.		x		

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	166.56 ton / day
Waste Collection Amount (ton/day)	84.50 ton / day
Coverage Rate (%)	50.91 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door				
Curve	x	x		x
Station				
Bell	x	x	x	
Container				
Primary				

Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA,LGU and /or Private Contractor

MARIKINA	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								
			Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	100	-	21	9		10					40
Contractor	0	1									-
Total	100	1	21	9		10					40

■ Collection Time

Type of Collection area	Collection Time
	0:00 6:00 12:00 18:00 24:00
Main Thoroughfare (commercial, residential area)	5:00 ◄——► 13:00
Residential area	13:00 ◄——► 21:00

■ Collection Frequency

Residential Area	Once a week
Commercial Area	Daily
Market	Daily (Public Market : 24hr., Private Market : Once a day)

3) **Contract Out System**

Type of Contract	
Term of Contract	
Responsible Sector for Selection of Contractor	
Specification	
Estimation Method of Contract Cost	
Contract System	

4) **Supervision / Management System to Collection Work**

Waste Volume Check System	Waste volume Check is done in transfer station. At the same time , Condition of the vehicles and consumer of fuel is checked. Dispatch office ⟶ Collection area ⟶ Transfer station ⟶ Disposal site ⟶ Collection area ⟶ Transfer station ⟶ Disposal site ⟶ Garage
Monitoring System to Collection activity	Monitoring team (4 inspectors) They inspect collection activities according to inspection form and they use a bicycles to inspect.. And also daily report is issued to drivers.

4. **Haulage and Transfer System**

Type of Haulage system	Indirect haulage system by transfer station
Type of Transfer System	Stage type

5. **Maintenance System for Vehicle and Equipment**

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU		x	x
Private Contractors			

Current Solid Waste Management(3/4) LGU : Marikina

6. Public Cleansing

1) Street Sweeping

	Main thoroughfare	Secondary Road	Total
Role Assignment	LGU	Barangay	
Total Length(km)			
Swept Length (km)			100
Sweeping System	Mainly manual (2 mechanical sweepers)	Manual	
Frequency	Daily		
Working Time	6:00-14:00 (14:00-22:00)		
Monitoring System	2 inspectors		
Heaping Point & Container	A collected waste by sweepers is collected by one compactor truck assigned for street sweeping service.		

2) River Cleansing

	Main River
Role Assignment	LGU
Total Length(km)	
Cleansing Length (km)	5.0
Cleansing System	Manual by using boat (Some barangay has a their own boat.)
Frequency	River park authority request to clean up the river.
Working Time	irregular
Monitoring System	River park authority
Heaping Point & Container and	on the bank

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
San mateo	83

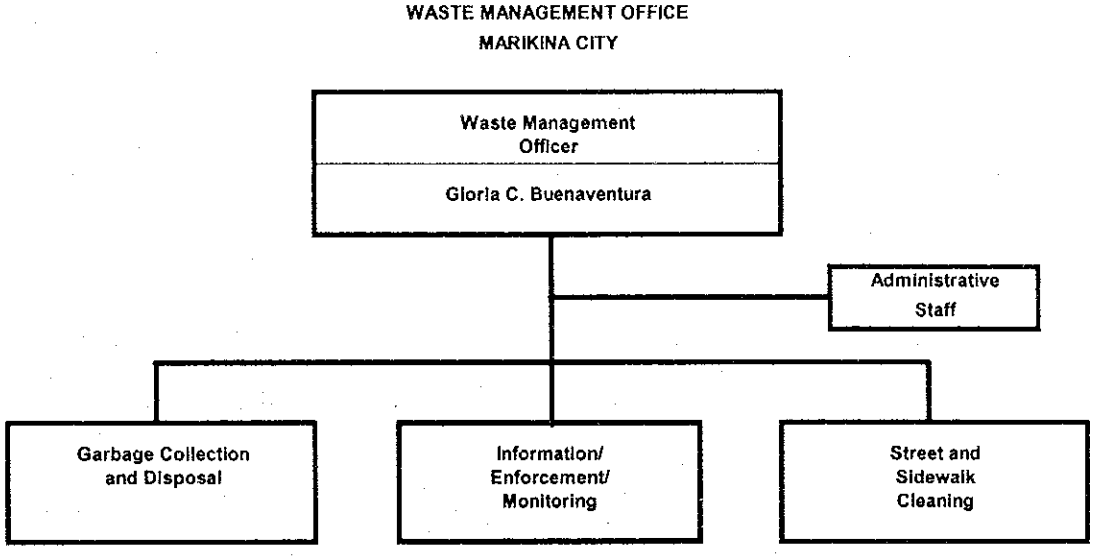
Disposal amount is estimated based on the disposal volume obtained by incoming survey.

9. Recycling Activity

Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

10. Organization

1) Organization chart



2) No. of Personnel

MARIKINA	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	1	5									2	8
Operation/ Regular			8	30								38
Collection					50	150						200
Beatification								60				60
Depot/maint/ Motorpool										4		4
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	1	5	8	30	50	150		60		4	2	310

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Pasig

1. General Information

	NSO	MMUTIS
Area (km2)	31	31
Population	471,000	471,075
Population Density(person('000)/km2)	15.2	15.2
Annual Growth Rate (% p.a.) 1980-1995	2.4	2.4
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office, I/R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)		x	x	
Collection (Market, Commercial)		x	x	
Transportation			x	
Street Sweeping		x		
River Cleansing	x			
Maintenance		x		
Operation of Individual T.S.		x		

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	225.44 ton / day
Waste Collection Amount (ton/day)	215.78 ton / day
Coverage Rate (%)	95.72 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door				
Curve	x	x		x
Station			x	
Bell	x	x		x
Container			x	
Primary				

Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA,LGU and /or Private Contractor

PASIG CITY	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								Total
			Compactor					Dump-Truck			
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	4	-									-
LGU	49	-	9			6			20	14	49
Contractor	47	10					4		55		59
Total	100	10	9			6	4		75	14	108

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
Main thoroughfare	4:00 ←	→	12:00		
Secondary		12:00 ←	→	20:00	
Main thoroughfare	→ 4:00			20:00 ←	

■ Collection Frequency

Residential Area	Daily
Commercial Area	Daily
Market	Daily

3) Contract Out System

Type of Contract	Per Trip
Term of Contract	1 year
Responsible Sector for Selection of Contractor	Administrative office
Specification	
Estimation Method of Contract Cost	150 pesos / cum
Contract System	1. Publish invitation to bid 2. Pre-qualification / Accreditation 3. Inspection of units & facilities 4. Preparation of Government estimation 5. Bidding 6. Awarding of contracts to winners

4) Supervision / Management System to Collection Work

Waste Volume Check System	Garage → Dispatch office → Collection area → Transfer station (volume check) → Dispatch office → Collection area → Transfer station → Garage
Monitoring System to Collection activity	ESC office : 5 monitoring stuffs C&G, Mayors office, Action line have an individual staffs for monitoring.

4. Haulage and Transfer System

Type of Haulage system	Indirect haulage system
Type of Transfer System	Stage type

5. Maintenance System for Vehicle and Equipment

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU		x	x
Private Contractors			

Current Solid Waste Management(3/4) LGU : Pasig

6. Public Cleansing

1) Street Sweeping

	Primary Road	Secondary Road	Total
Role Assignment	C&G office	C&G office	
Total Length(km)			
Swept Length (km)			260.7
Sweeping System			
Frequency			
Working Time			
Monitoring System			
Heaping Point & Container			

2) River Cleansing

	Main River	Secondary River	Total
Role Assignment	MMDA, DPWH		
Total Length(km)			
Cleansing Length (km)			11.3
Cleansing System			
Frequency			
Working Time			
Monitoring System			
Heaping Point & Container and			

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
San Mateo	211

Disposal amount is estimated based on the disposal volume obtained by incoming survey.

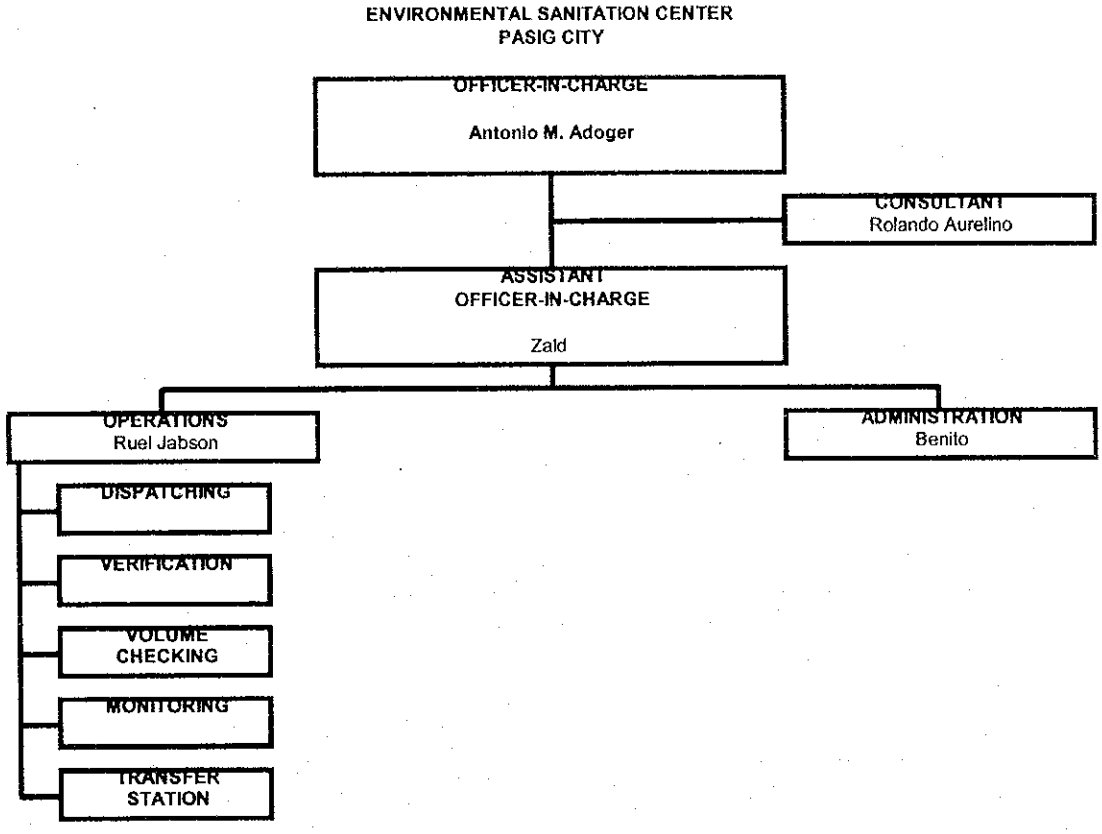
9. Recycling Activity

Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

Current Solid Waste Management(4/4) LGU : Pasig

10. Organization

1) Organization chart



2) No. of Personnel

PASIG	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	3	4									2	9
Operation/ Regular			1	15								16
Collection					38	150						188
Beatification												
Depot/maint/ Motorpool										2		2
Transfer Station							4					4
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	3	4	1	15	38	150	4			2	2	219

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Pateros

1. General Information

	NSO	MMUTIS
Area (km2)	2.1	2.1
Population	55,,000	55,286
Population Density(person ('000)/km2)	26.2	26.2
Annual Growth Rate (% p.a.) 1980-1995	2.4	2.4
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office, I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)	x	x		
Collection (Market, Commercial)	x	x		
Transportation	x	x		
Street Sweeping	x			
River Cleansing	x			
Maintenance			x	
Operation of Individual T.S.				

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	24.48 ton / day
Waste Collection Amount (ton/day)	17.25 ton / day
Coverage Rate (%)	70.47 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door				
Curve	x	x		x
Station			x	
Bell	x	x		x
Container				
Primary				

■ Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA, LGU and /or Private Contractor

PATEROS	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								
			Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	50	-									-
LGU	50	-	3	3		1				3	10
Contractor	0	0									-
Total	100	0	3	3		1				3	10

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
Main thoroughfare	4:00 ←——→ 7:00				
Other road			12:00 ←——→ 19:00		

■ Collection Frequency

Residential Area	Daily / Once other day
Commercial Area	Daily
Market	Daily

3) Contract Out System

Type of Contract	
Term of Contract	
Responsible Sector for Selection of Contractor	
Specification	
Estimation Method of Contract Cost	
Contract System	Basically, the municipality dose not contract with private collection company. However, in case of collection vehicle is under repair, the municipality contracts with private. Contract cost is 150 pesos per cubic meter.

4) Supervision / Management System to Collection Work

Waste Volume Check System	Waste volume check system with trip ticket
Monitoring System to Collection activity	Monitoring team (3 persons)

4. Haulage and Transfer System

Type of Haulage system	Direct and indirect haulage system
Type of Transfer System	Mini truck to compactor

5. Maintenance System for Vehicle and Equipment

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU			
Private Contractors		x	x

Current Solid Waste Management(3/4) LGU : Pateros

6. Public Cleansing

1) Street Sweeping

	Main thoroughfare	Secondary Road	Total
Role Assignment	MMDA	MMDA	
Total Length(km)			
Swept Length (km)			11.1
Sweeping System	Manual	Manual	
Frequency	Daily (except Sunday)		
Working Time	5:00 - 12:00		
Monitoring System	Monitoring stuff (Foreman) : 1 person		
Heaping Point & Container	on the road side with nylon sack		

2) River Cleansing

	Main River
Role Assignment	MMDA
Total Length(km)	
Cleansing Length (km)	0.7
Cleansing System	Manual with boat
Frequency	boat
Working Time	
Monitoring System	
Heaping Point & Container and	

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
San Mateo	17

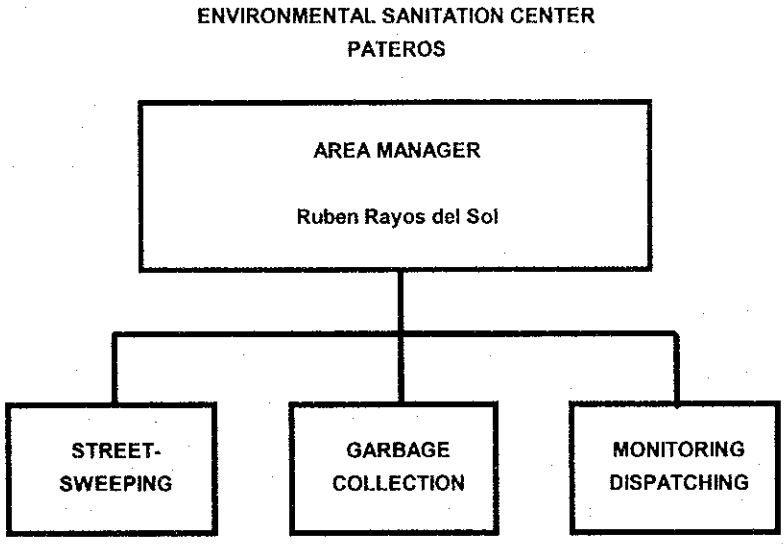
Disposal amount is estimated based on the disposal volume obtained by incoming survey.

9. Recycling Activity

Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

10. Organization

1) Organization chart



2) No. of Personnel

PATEROS	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	1	1									2	4
Operation/ Regular												
Collection					5	21						26
Beatification								33			0	33
Depot/maint/ Motorpool									1	1	0	2
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	1	1			5	21		33	1	1	2	65

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : San Juan

1. General Information

	NSO	MMUTIS
Area (km2)	5.9	24.7
Population	124,187	124,187
Population Density(person ('000)/km2)	21.0	5.0
Annual Growth Rate (% p.a.) 1980-1995	2.4	2.4
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)		x	x	
Collection (Market, Commercial)			x	
Transportation			x	
Street Sweeping		x		
River Cleansing		x		
Maintenance		x	x	
Operation of Individual T.S.				

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	73.56 ton/ day
Waste Collection Amount (ton/day)	52.77 ton / day
Coverage Rate (%)	71.74%

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door				
Curve	x			
Station				
Bell	x			
Container		x	x	x
Primary	x	x		

■ Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA, LGU and /or Private Contractor

SAN JUAN	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								
			Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	5	-		1				1		6	8
Contractor	95	2					15		14		29
Total	100	2		1			15	1	14	6	37

Current Solid Waste Management(2/4) LGU : San Juan

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
1st trip	→2:00				23:00←
2nd trip	5:00 ←→ 9:00				

■ Collection Frequency

Residential Area	
Commercial Area	
Market	

3) Contract Out System

Type of Contract	Package Deal
Term of Contract	3 months
Responsible Sector for Selection of Contractor	PEBAC Committee
Specification	Yes
Estimation Method of Contract Cost	
Contract System	1. Publish invitation to bid 2. Pre-qualification / Accreditation 3. Inspection of units & facilities 4. Preparation of Government estimation 5. Bidding 6. Awarding of contracts to winners

4) Supervision / Management System to Collection Work

Waste Volume Check System	by Trip Ticket A dispatcher is assigned to inspect all available vehicles and to issue a route slip to the proper collection of garbage / waste.
Monitoring System to Collection activity	

4. Haulage and Transfer System

Type of Haulage system	Direct haulage system
Type of Transfer System	N/A

5. Maintenance System for Vehicle and Equipment

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU			
Private Contractors			

Current Solid Waste Management(3/4) LGU : San Juan

6. Public Cleansing

1) Street Sweeping

	Main Road	Secondary Road	Total
Role Assignment	MMDA/LGU	LGU	
Total Length(km)			107.6 km
Swept Length (km)			107.6 km
Sweeping System	Manual	Manual	
Frequency	Daily		
Working Time	5:00 AM- 2:00 PM, 2:00 PM - 10:00PM		
Monitoring System	Dispatcher & Supervisor		
Heaping Point & Container	Collection into a garbage buggy for pick up by the mini-dump truck.		

2) River Cleansing

	Main tributary / creek
Role Assignment	LGU
Total Length(km)	8.0 km
Cleansing Length(km)	8.0 km
Cleansing System	Manual / backhoe
Frequency	daily
Working Time	8:00 AM - 5:00 P M
Monitoring System	Dispatcher / Supervisor
Heaping Point & Container and	Trap system located in middle of the river's 2 km. Stretch, sacked and heaped on the river bank for collection by the dump truck.

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
Payatas	41.00 ton / day
San Mateo	11.00 ton / day

- Disposal amount is estimated based on the disposal volume obtained by incoming survey.

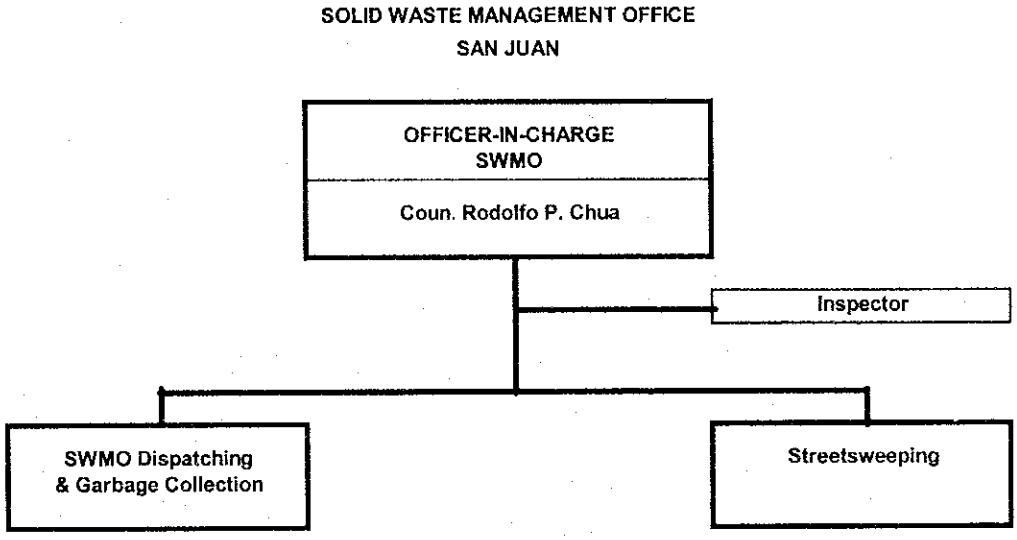
9. Recycling Activity

Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

Current Solid Waste Management(4/4) LGU : San Juan

10. Organization

1) Organization chart



2) No. of Personnel

SAN JUAN	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	1	3										4
Operation/ Regular	1			2								3
Collection					7							7
Beatification								26				26
Depot/maint/ Motorpool												
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	2	3		2	7			26				40

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Taguig

1. General Information

	NSO	MMUTIS
Area (km2)	45.4	34.5
Population	381,000	381,350
Population Density(person ('000)/km2)	8.4	11.0
Annual Growth Rate (% p.a.) 1980-1995	7.2	7.2
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private
Collection (Residential Area)		x * (belong tertiary road)	x
Collection (Market, Commercial)			x
Transportation			x
Street Sweeping	x	x**	
River Cleansing		x**	
Park & Green Area Cleansing		x**	
Maintenance		x	x
Operation of Individual T.S.			

* Garbage Collection Office ** Clean and Green Office

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	149.10 ton / day
Waste Collection Amount (ton/day)	84.68 ton / day
Coverage Rate (%)	56.79 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door				
Curve	x	x	x	x
Station	x *		x	x
Bell	x			
Container				
Primary **	x **			

* Box type of stock yard made from concrete is used in some compounds.

** Independent pushcart collectors collect waste from each houses where located back side of the main route, and receive a money from household directly.

Current Solid Waste Management(2/4) LGU: Taguig

■ Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA, LGU and /or Private Contractor

TAGUIG	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								
			Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	16	-			1			2		3	6
Contractor	84	1							18		18
Total	100	1			1			2	18	3	24

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
1st trip dispatch time (Main thoroughfare)	3 5		11		
2nd trip dispatch time (Internal and secondary area)	2		11	15	

■ Collection Frequency

Main thoroughfare	Daily
Residential Area	Twice a week
Commercial Area	Daily
Market	Daily

3) **Contract Out System**

Type of Contract	Package Deal (1.8 mill. Pesos /mon.-July,1996-June,1997)
Term of Contract	1 year
Responsible Sector for Selection of Contractor	Bidding Staff Office
Specification	Exist
Estimation Method of Contract Cost	based on existing rate/s as compared to existing contractors of other LGUs (Basic contract condition) : First trip : 11 routes, Second trip : 12 routes, Total : 23 routes (Mon.- Sta.) Average no. of trip per month: about 600 trips
Contract System	■ 12 units to 10 wheel D.T.-20%reserve garbage truck ■ inspection by ESC area manager and/or representative of the municipality

4) **Supervision / Management System to Collection Work**

Waste Volume Check System	*Issue of a trip ticket (supervisor and dispatchers quarter or office)→ Collection → Volume check (Dispatch office)→ Disposal site / Transfer station → *
Monitoring System to Collection activity	Main role activity is to check a collection route. 5 monitoring teams 2-3stuffs/team

Current Solid Waste Management(3/4) LGU: Taguig

4. Haulage and Transfer System

Type of Haulage system	Direct haulage system to disposal site (50%) and indirect haulage system by Las Pinas T.S.(50%)
Type of Transfer System	N/A

5. Maintenance System for Vehicle and Equipment

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU	x		
Private Contractors		x	x

6. Public Cleansing

1) Street Sweeping

	C-5	Other Road	Total
Role Assignment	MMDA	LGU	-
Total Length(km)	4.0	46.55	50.55
Swept Length (km)	4.0	39.085	43.085
Sweeping System	Manual	Manual	-
Frequency	Daily	Daily	-
Working Time	6:00AM-2PM	5-8AM, 3-6PM (6hrs.)	-
Monitoring System		Checker, Monitoring G	-
Heaping Point & Container		designated area with plastic bag	-

2) River Cleansing

	Main Taguig River
Role Assignment	LGU
Total Length(km)	
Cleansing Length (km)	10
Cleansing System	Cleansing by manual with boat
Frequency	Request base
Working Time	irregular
Monitoring System	
Heaping Point & Container	River side without container, Direct loading to open dump truck

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
San Mateo S.L.S.	37
Carmona S.L.S	47
	84

Disposal amount is estimated based on the disposal volume data accumulated by MMDA.

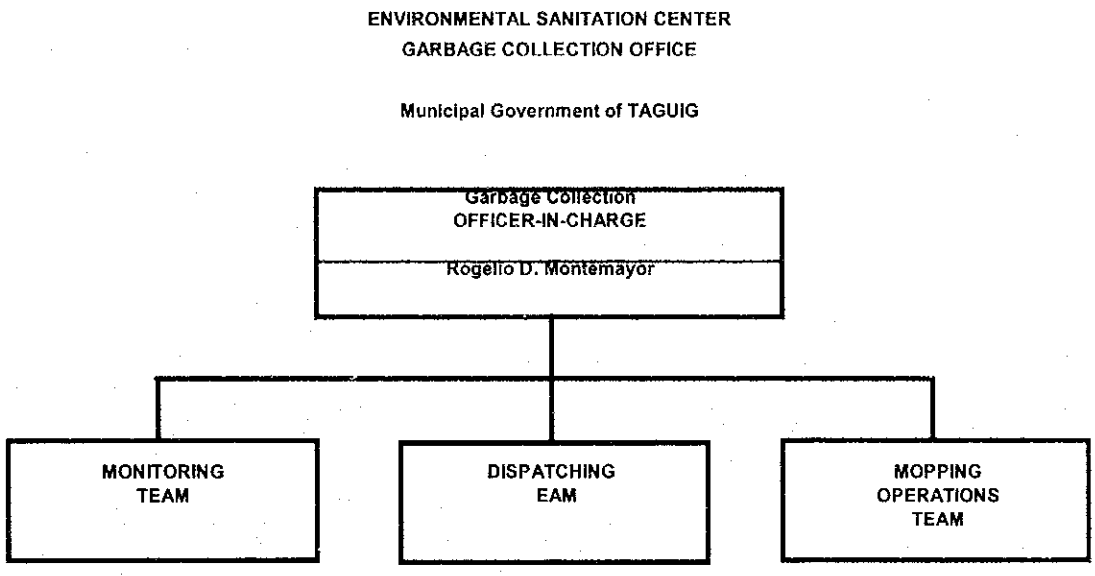
9. Recycling Activity

Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

Current Solid Waste Management(4/4) LGU: Taguig

10. Organization

1) Organization chart



2) No. of Personnel

TAGUIG	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	7	3									6	16
Operation/ Regular			3								30	33
Collection					4	12						16
Beatification								129				129
Depot/maint/ Motorpool									1			1
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	7	3	3		4	12		129	1		36	195

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Makati

1. General Information

	NSO	MMUTIS
Area (km2)	29.9	57.6
Population	484,000	494,941
Population Density(person ('000)/km2)	16.2	8.6
Annual Growth Rate (% p.a.) 1980-1995	1.8	1.8
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I/R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)			x	
Collection (Market, Commercial)			x	
Transportation			x	
Street Sweeping		x		
River Cleansing		x*		x**
Maintenance		x	x	
Operation of individual T.S.				

* LGU supports and coordinates specified date of operation.

** Operation by army, sponsored by MARIH (Makati Ass'n. on Riversides Industries & Hoteliers)

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	296.62 ton / day
Waste Collection Amount (ton/day)	290.28 ton / day
Coverage Rate (%)	97.86 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door	x	x		
Curve	x	x		x
Station			x	x
Bell	x			
Container			x	
Primary		x	x	

Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA,LGU and /or Private Contractor

MAKATI CITY	Coverage Ratio (%)	No. of Contractor	No. of Collection								
			Vehicle	Compactor				Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	2	-	1	4		2					7
Contractor	98	5		1				67	90		158
Total	100	5	1	5		2		67	90		165

Current Solid Waste Management(2/4) LGU: Makati

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
LGU		6 ↔ 8	12 ↔ 14		
LGU (Mopping Operation)			12 ↔ 14 Mopping Ope.		
Private		6 ↔ 8	12 ↔ 14		

■ Collection Frequency

Residential Area	Daily
Commercial Area	Daily
Market	Daily

3) **Contract Out System**

Type of Contract	Per Trip
Term of Contract	One year
Responsible Sector for Selection of Contractor	PBAC
Specification	Exist
Estimation Method of Contract Cost	PBAC & COA rules & regulation
Contract System	1. An invitation to pre-qualify and bid or submit quotation 2. .Pre-qualification documents are evaluated by the City's Bids and Awards Committee (PBAC). 3. Inspection & Verification of trucks and garage by SWMD Personnel. 4. A qualified contractor is subject to inspection of registration documents, motorpool or garage and visual inspection of units by SWMD personnel.

4) **Supervision / Management System to Collection Work**

Waste Volume Check System	Trucks are inspected before dispatch at GCDS office before proceeding to collection, route. *Issue of a trip ticket (GCDS office) → Collection → Volume check (GCDS office) → Disposal site / Transfer station → *
Monitoring System to Collection activity	1. Supervision done by garbage collection & disposal services section of SWMD.

4. **Haulage and Transfer System**

Type of Haulage system	Direct haulage system to disposal site (85%) and indirect haulage system by Las Pinas T.S.(15%)
Type of Transfer System	N/A

5. **Maintenance System for Vehicle and Equipment**

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU			
Private Contractors		x	x

Current Solid Waste Management(3/4) LGU : Makati

6. Public Cleansing

1) Street Sweeping

	Main Thoroughfare	Primary, Secondary, Tertiary	Total
Role Assignment	MMDA/LGU	LGU	-
Total Length(km)			256
Swept Length (km)			99.558
Sweeping System	Mechanical(2 sweepers)	Manual	-
Frequency	Daily	Daily	-
Working Time	6:00 AM - 10:00 AM & 1:00 PM - 5:00 PM 8:00 AM - 12:00 NN & 1:00 PM - 5:00 PM		
Monitoring System	Monitoring done by foremen and coordinators		
Heaping Point & Container		road side Plastic bags & sacks	-

2) River Cleansing

	Pasig River	Other River	Total
Role Assignment	DPWH	LGU	-
Total Length(km)			
Cleansing Length (km)			5-6
Cleansing System		Coordination & Supporting	-
Frequency		irregular	-
Working Time		irregular	
Monitoring System			
Heaping Point & Container and			

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
San Mateo	88 ton / day
Payatas	195 ton / day

- Disposal amount is estimated based on the disposal volume data accumulated by MMDA.

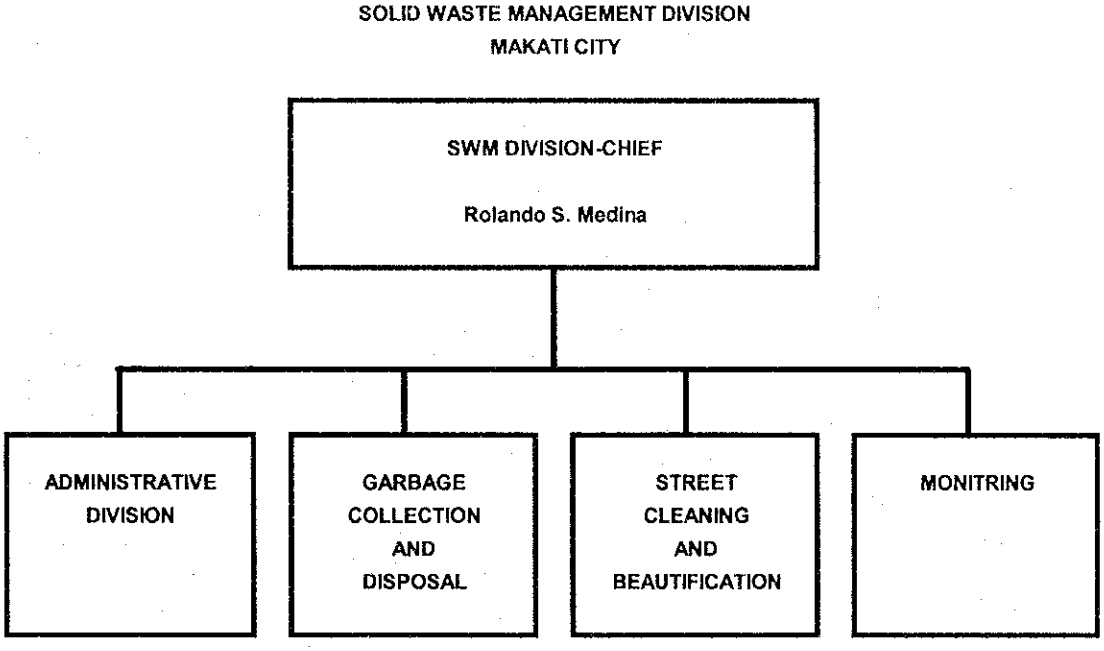
9. Recycling Activity

Community Base	
Baranbay Base	Consolidated efforts Makati City has mobilized and organize all junkshop granting for a successfully addhessive the first phase of recycling waste segregation, massive information campaign is being done in reservation to the final waste disposal system that will be adopted by the LGU.
Municipality Base	

Current Solid Waste Management(4/4) LGU : Makati

10. Organization

1) Organization chart



2) No. of Personnel

MAKATI	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	1	20									16	37
Operation/ Regular	2		3	43								48
Collection						91						91
Beatification								243			11	254
Depot/maint/ Motorpool									1			1
Transfer Station							58					58
Dumpsite/ Operation												
MMDA back up		5										5
Special Project/ Operations											35	35
Total	3	25	3	43		91	58	243	1		62	529

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Pasay

1. General Information

	NSO	MMUTIS
Area (km2)	18.5	15.9
Population	409,,000	397,845
Population Density(person ('000)/km2)	22.1	25.0
Annual Growth Rate (% p.a.) 1980-1995	2.4	2.4
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)		x	x	
Collection (Market, Commercial)			x	
Transportation		x	x	
Street Sweeping	x	x		
River Cleansing	x			
Maintenance	x	x	x	
Operation of Individual T.S.				x*

* Operation & maintenance of T.S. is contracted to private company .

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	186.54 ton / day
Waste Collection Amount (ton/day)	179.50 ton / day
Coverage Rate (%)	96.23 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door	x			x
Curve	x		x	x
Station				
Bell				x
Container	x	x	x	
Primary				

Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA,LGU and /or Private Contractor

PASAY CITY	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								Total
			Compactor					Dump-Truck			
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	3	-									-
LGU	6	-	4	2							6
Contractor	91	1						28	15		43
Total	100	1	4	2				28	15		49

Current Solid Waste Management(2/4) LGU : Pasay

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
LGU		8 ◄——————► 17			
Private		6 ◄——► 9		18 ◄——► 20	
Mopping Operation					

■ Collection Frequency

Residential Area	
Commercial Area	
Market	

3) **Contract Out System**

Type of Contract	Package Deal
Term of Contract	
Responsible Sector for Selection of Contractor	
Specification	
Estimation Method of Contract Cost	
Contract System	

4) **Supervision / Management System to Collection Work**

Waste Volume Check System	
Monitoring System to Collection activity	

4. **Haulage and Transfer System**

Type of Haulage system	Direct haulage system (24%) and indirect haulage system (76%) by T.S.
Type of Transfer System	Collective transfer station (Las Pinas T.S.) & transfer system by peyloader

5. **Maintenance System for Vehicle and Equipment**

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU	x		
Private Contractors		x	x

Current Solid Waste Management(3/4) LGU : Pasay

6. Public Cleansing

1) Street Sweeping

	Main Thoroughfare	Secondary Road	Total
Role Assignment	MMDA/LGU?	LGU	-
Total Length(km)			66
Swept Length (km)	27.4	5..6	33
Sweeping System	Manual	Manual	-
Frequency	Daily	Daily	-
Working Time	MMDA : 6:00AM - 10:00 , 2:00 PM -6:00PM (8 hrs.)		
Monitoring System	Monitoring by supervisors & foremen		
Heaping Point & Container	Push carts & Buggies		

2) River Cleansing

	Main River	Secondary River	Total
Role Assignment			
Total Length(km)			
Cleansing Length (km)			27.5
Cleansing System			
Frequency			
Working Time			
Monitoring System			
Heaping Point & Container and			

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
San Mateo	52
Carmona	126

Disposal amount is estimated based on the disposal volume obtained by incoming survey.

9. Recycling Activity

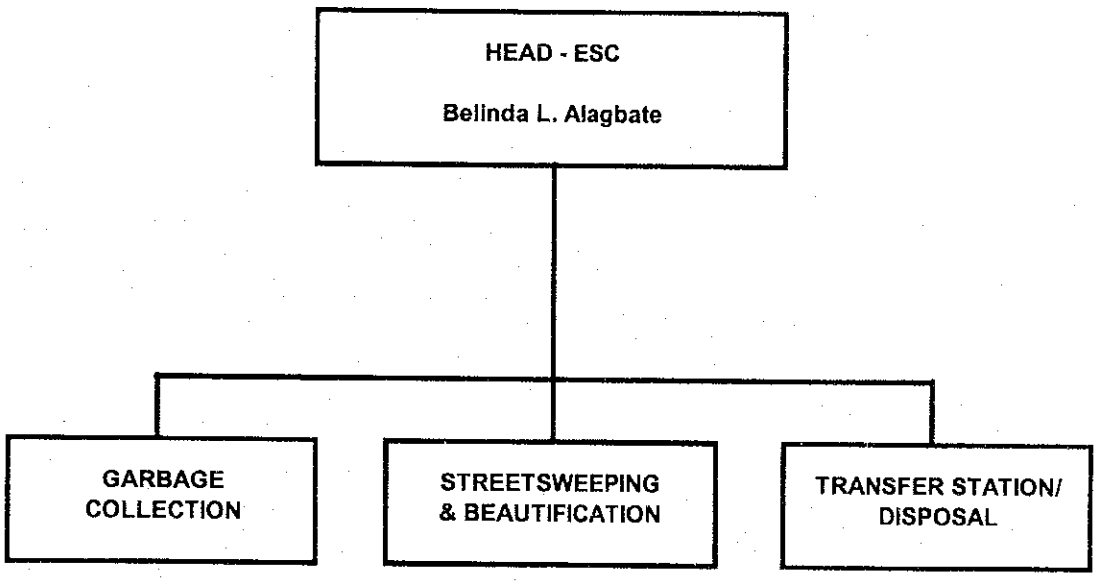
Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

Current Solid Waste Management(4/4) LGU : Pasay

10. Organization

1) Organization chart

ENVIRONMENTAL SANITATION CENTER
PASAY CITY



2) No. of Personnel

PASAY	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	1											1
Operation/ Regular	3		6									9
Collection					4	8						12
Beatification								20				20
Depot/maint/ Motorpool												
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	4		6		4	8		20				42

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Muntinlupa

1. General Information

	NSO	MMUTIS
Area (km2)	46.7	46.7
Population	400,000	399,846
Population Density(person ('000)/km2)	8.6	8.6
Annual Growth Rate (% p.a.) 1980-1995	7.4	7.4
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)		x*	x	
Collection (Market, Commercial)			x	
Transportation			x	
Street Sweeping		x*		
River Cleansing		x*		x:**
Maintenance		x*	x	
Operation of individual T.S.				

* Environmental Sanitation Center Office (ESCO)

** Cleansing project by Muntinlupa Development Foundation (MDF), barangays and shool

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	198.26 ton / day
Waste Collection Amount (ton/day)	186.77 ton / day
Coverage Rate (%)	94.20 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door	x	x		
Curve	x	x		
Station			x	x
Bell	x			
Container				
Primary	x*		x**	

*Barangay Bayanan Alabang ** Alabang Public Market

Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA,LGU and /or Private Contractor

MUNTINLUP	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								
			Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	4	-	8	2							10
Contractor	96	1						29			29
Total	100	1	8	2				29			39

Current Solid Waste Management(2/4) LGU : Muntinlupa

■ Collection Time

Type of Collection area	Collection Time
	0:00 6:00 12:00 18:00 24:00
MMDA (Mapping Collection)*	5 7
Private Contractor	5 9
	13 16
	1 21

* Mapping Collection : supporting collection work

■ Collection Frequency

Main thoroughfare	Daily
Barangay	Twice a week
Market	Daily

3) Contract Out System

Type of Contract	Package Deal
Term of Contract	1 year
Responsible Sector for Selection of Contractor	PBAC (Pre - Bids and Awards Committee)
Specification	exist
Estimation Method of Contract Cost	
Contract System	1. To formally start the bidding process, an invitation to pre-quality and bid is published in newspapers of general circulation. 2. Pre -qualification document are then evaluated by the pre-bids and awards committee.(PBAC) 3. Inspection and verification of trucks.

4) Supervision / Management System to Collection Work

Waste Volume Check System	Supervision of garbage collection and disposal operations is being handled by the collection and disposal services section of ESC. Trucks are being inspected and dispatched at ESC office to the designated route. After collection, trucks are again sent to ESC office for volume checking before issuing the trip ticket. With the trip ticket, the truck may then proceed to the disposal site.
Monitoring System to Collection activity	10 monitoring stuffs Monitoring for collection, street sweeping, and river cleansing

4. Haulage and Transfer System

Type of Haulage system	Direct haulage system(90%) and indirect haulage system by transfer station(10%)
Type of Transfer System	Collective transfer station (Las Pinas T.S.)

5. Maintenance System for Vehicle and Equipment

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU			x
Private Contractors		x	x

Current Solid Waste Management(3/4) LGU : Muntinlupa

6. Public Cleansing

1) Street Sweeping

	Primary Road	East & West Service Road	Secondary Road	Total
Role Assignment	LGU	LGU	LGU	-
Total Length(km)	9.5	8.0	25.889	43.389
Swept Length (km)	9.5	8.0	25.889	43.389
Sweeping System	Manual	Manual	Manual	-
Frequency	Daily	Daily	Daily	-
Working Time	10 to 12 AM	4hrs.(2hrs./shift)		-
Monitoring System	Street sweepers are supervised and monitored by the foreman, field workers and team leaders in their respective area of operations as well as by the area manager.			
Heaping Point & Container	Road side with Plastic bag			

2) River Cleansing

	Main River	Secondary River	Total
Role Assignment	LGU	LGU	-
Total Length(km)			47.5
Cleansing Length (km)			13.8
Cleansing System	boat	manual	-
Frequency	once/1.5 month		-
Working Time	8 hrs.		
Monitoring System	Direct monitored by the SWMO II and the ESC head		
Heaping Point & Container and	Sack and Plastic bag		

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
Carmona S.L.S	186

- Disposal amount is estimated based on the disposal volume data accumulated by MMDA.

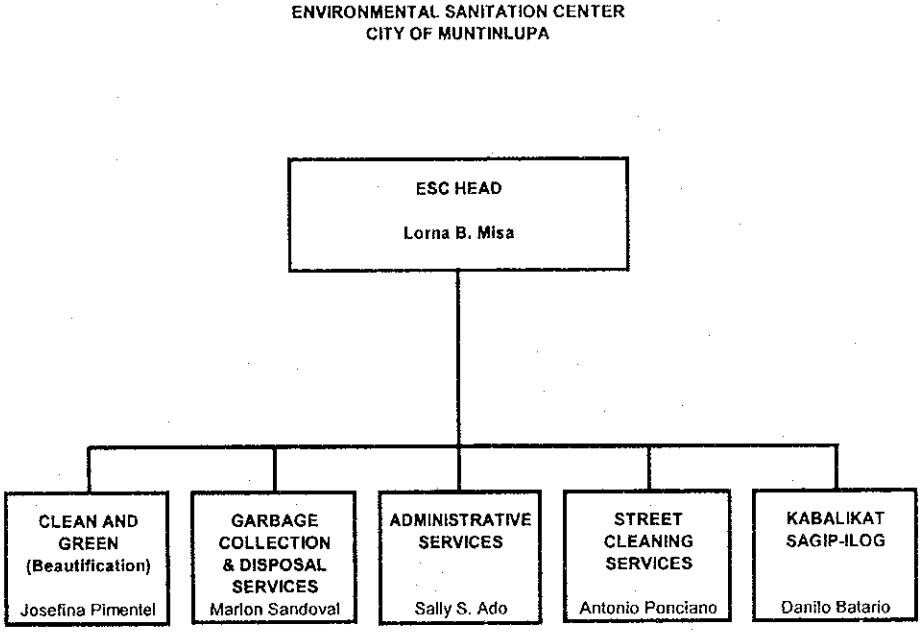
9. Recycling Activity

Community Base	Initiated sorting and segregation of garbage at Intercity Homes and Soldiers Hills subdivision
Baranbay Base	N/A
Municipality Base	N/A

Current Solid Waste Management(4/4) LGU : Muntinlupa

10. Organization

1) Organization chart



2) No. of Personnel

MUNTINLUPA	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	3	8									8	19
Operation/ Regular	1		11									12
Collection						9						9
Beatification								57			16	73
Depot/maint/ Motorpool									6	2		8
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations			4								666	670
Total	4	8	15			9		57	6	2	690	791

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Mandaluyong

1. General Information

	NSO	MMUTIS
Area (km2)	11.3	34.8
Population	287,000	286,870
Population Density(person ('000)/km2)	25.4	8.2
Annual Growth Rate (% p.a.) 1980-1995	2.3	2.3
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU *	Private	Others
Collection (Residential Area)		x	x	
Collection (Market, Commercial)		x	x	
Transportation		x	x	
Street Sweeping		x		
River Cleansing	x	x		
Maintenance		x	x	
Operation of individual T.S.				

* Environmental Sanitation Center Office (ESC Office)

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	176.84 ton / day
Waste Collection Amount (ton/day)	171.89 ton / day
Coverage Rate (%)	97.20 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door	x	x		x
Curve	x			x
Station			x	
Bell	x			
Container		x	x	x
Primary	(x)*			

Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA,LGU and /or Private Contractor

MANDALU yongYONG YONG	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	5	-		2				5		4	11
Contractor	95	1						24	54		78
Total	100	1		2				29	54	4	89

Current Solid Waste Management(2/4) LGU : Mandaluyong

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
Main Thoroughfare	4 ◄——► 7			18 ◄——► 0	
Barangay		8 ◄——► 15			

■ Collection Frequency

Main Thoroughfare	Daily
Barangay	Every other day
Market	Daily

3) **Contract Out System**

Type of Contract	Per Trip
Term of Contract	One Year
Responsible Sector for Selection of Contractor	City Council
Specification	None (basic condition - loading volume 12-18cu m / unit, Total No. of unit - 30-40 units)
Estimation Method of Contract Cost	Based on uniform and reasonable rate acceptable to MMDA being used Metro Manila wide
Contract System	Negotiation

4) **Supervision / Management System to Collection Work**

Waste Volume Check System	1. Issue of trip ticket In order to check the volume of loading waste and to manage the collection vehicles, trip ticket is issued to every collection vehicles by dispatch office. 2. Volume check Loaded trucks are checked out by dispatch dispatching personnel of the LGU. 3. Once checked out, trucks then proceed to the San Mateo S.L.S
Monitoring System to Collection activity	4 monitoring stuffs + barangay assistants

4. **Haulage and Transfer System**

Type of Haulage system	Direct haulage system to disposal site
Type of Transfer System	N/A

5. **Maintenance System for Vehicle and Equipment**

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU			
Private Contractors		x	x

Current Solid Waste Management(3/4) LGU : Mandaluyong

6. Public Cleansing

1) Street Sweeping

	Edsa, and Ortiga street	Other street	Total
Role Assignment	MMDA	LGU	-
Total Length(km)			
Swept Length (km)			74.6
Sweeping System	Manual	Manual	-
Frequency	Daily	Daily	-
Working Time	6:00AM - 10:00AM, 2:00PM-4:00PM 6 hrs.		
Monitoring System	ESC rules and system		
Heaping Point & Container	Collected waste is heaped on the road side without any container and hauled by mobile buggies.		

2) River Cleansing

	San Juan River
Role Assignment	Joint effect MMDA , LGU and Government agencies - Pasig River Rehabilitation Program (PRRP)
Total Length(km)	
Cleansing Length (km)	2.2 km
Cleansing System	Manual by using boat from MMDA and DPWH, Manpower and D/T from LGU
Frequency	Daily
Working Time	8 hrs.
Monitoring System	ESC rules and system
Heaping Point & Container	Collected waste is heaped on the bank without container and hauled by dump truck.

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
San Mateo S.L.S	150 ton / day
Carmona	18 ton / day

- Disposal amount is estimated based on the disposal volume data accumulated by MMDA.

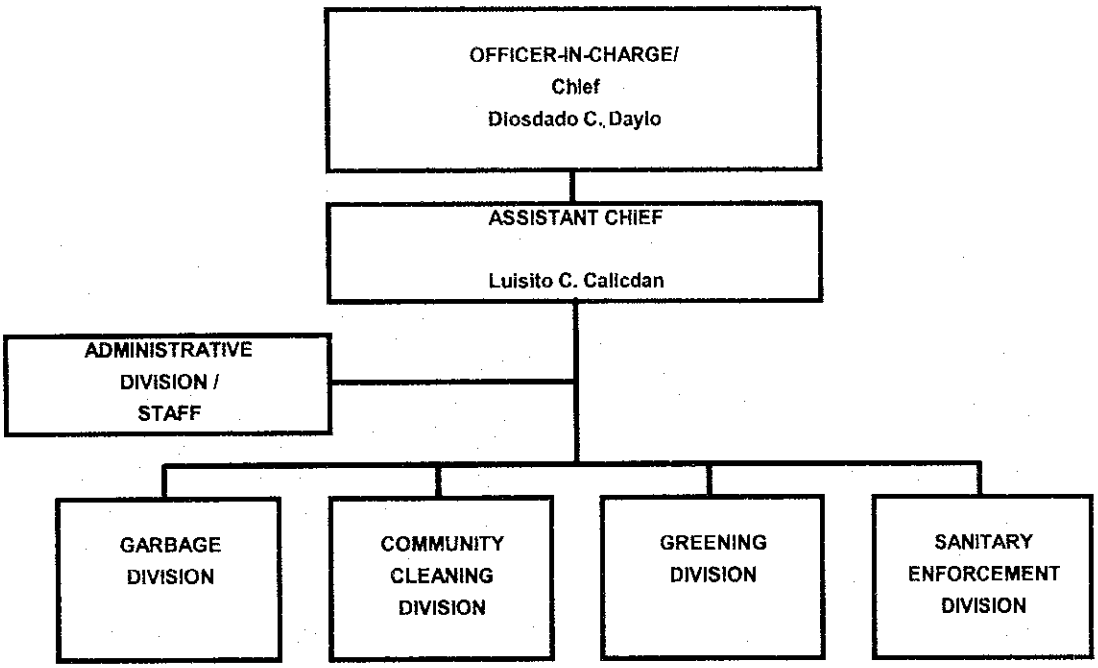
9. Recycling Activity

Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

10. Organization

1) Organization chart

ENVIRONMENTAL AND GREENING BEAUTIFICATION CENTER
MANDALUYONG CITY



2) No. of Personnel

MANDALUYONG	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	1	6									4	11
Operation/ Regular			2									2
Collection					11	12						23
Beatification								272				272
Depot/maint/ Motorpool												
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	1	6	2		11	12		272			4	308

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Paranaque

1. General Information

	NSO	MMUTIS
Area (km2)	47.7	45.4
Population	391,000	391,305
Population Density(person ('000)/km2)	8.2	8.6
Annual Growth Rate (% p.a.) 1980-1995	4.3	4.3
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)		x	x	
Collection (Market, Commercial)		x	x	
Transportation		x	x	
Street Sweeping		x		
River Cleansing		x		
Maintenance		x	x	
Operation of Individual T.S.		x		

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	195.17 ton / day
Waste Collection Amount (ton/day)	131.77 ton / day
Coverage Rate (%)	67.52 %

2) Collection

■ Collection System

Collection System	Residential Area	Commercial Area	Market	Institutional
Door-door	x			x
Curve	x	x		
Station			x	
Bell				
Container	x*		x	
Primary	x:**			

* Trash-bins (1 cu. m) are used for discharge containers along main thoroughfares in District-I. Those are contractor own containers. Total number of the trash-bins are approximately 200 units.

** The waste interior area where no access is collected by street sweepers.

Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA,LGU and /or Private Contractor

Current Solid Waste Management(2/4) LGU : Paranaque

PARANAQUE	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								
			Compactor					Dump-Truck			Total
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	27	-		2					6	2	10
Contractor	73	2					8		20		28
Total	100	2		2			8		26	2	38

■ Collection Time

Type of Collection area and responsible sector	Collection Time				
	0:00	6:00	12:00	18:00	24:00
LGU	4	7	16	19	
Private		6	1	18 20	

■ Collection Frequency

Residential Area	Once a week
Main Thoroughfare	Daily
Market	Daily

3) Contract Out System

Type of Contract	Package Deal
Term of Contract	3 months
Responsible Sector for Selection of Contractor	Municipal Council
Specification	None
Estimation Method of Contract Cost	None
Contract System	Negotiation

4) Supervision / Management System to Collection Work

Waste Volume Check System	*Issue of a trip ticket (Dispatch office) → Collection → Volume check (Dispatch office) → Disposal site / Transfer station → * Dispatch Office: MMDA : Payalag (District I) Contractors : each contractor's office
Monitoring System to Collection activity	Main role activity is to check a collection route . Totally 17monitoring stuffs

4. Haulage and Transfer System

Type of Haulage system	Direct haulage system and indirect haulage system by transfer station
Type of Transfer System	Palanyag T.S. (dispatch office) : Transfer system to 35 footer TRV (50 cu. m.)by peyloader & Las Pinas T.S.

Current Solid Waste Management(3/4) LGU : Paranaque

5. Maintenance System for Vehicle and Equipment

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU	x		
Private Contractors		x	x

6. Public Cleansing

1) Street Sweeping

	Main Thoroughfare	secondary Road	Third Class Road	Total
Role Assignment	LGU	LGU	LGU	
Total Length(km)				
Swept Length (km)	32.831	66.999		99.83
Sweeping System	Manual			
Frequency	Daily (7 days)			
Working Time	casual staff- 5:00AM-2:00PM(8hrs), contract staff-2:00-6:00(4hrs)			
Monitoring System	Monitoring activity is done by same collection monitoring staffs daily.			
Heaping Point & Container	trash-bins / side of street with plastic bag			

2) River Cleansing

	Main River
Role Assignment	LGU
Total Length(km)	13 (river- about 5 km, creek- about 8 km)
Cleansing Length (km)	4
Cleansing System	Manual by using bamboo raft
Frequency	1-2 times / week
Working Time	7:00AM- 4:00PM
Monitoring System	Monitoring activity is done by same collection monitoring staffs twice a week.
Heaping Point & Container	River side without container, Direct loading to open dump truck

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N/A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
Carmona S.L.S.	107
San Mateo s.L.S/	22
Total	129

10-62

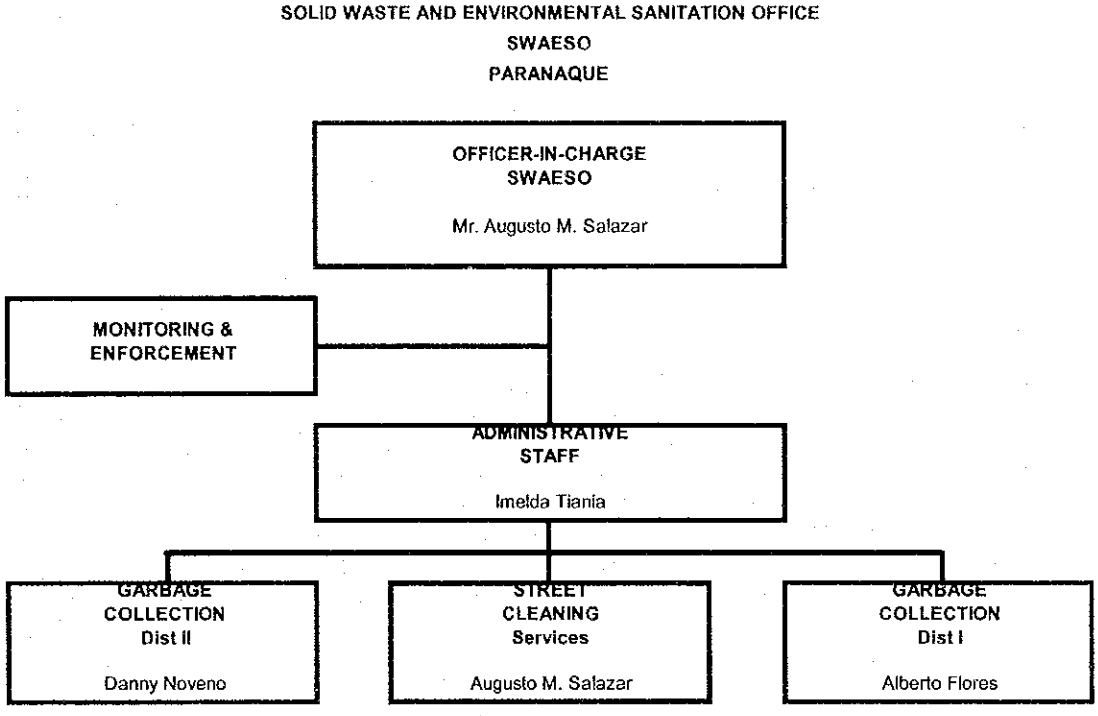
- Disposal amount is estimated based on the disp[illegible]1 volume data accumulated by MMDA.

9. Recycling Activity

Community Base	Bar. Sun Valley
Baranbay Base	Bar. Sun Valley, Bar. B.F. Homes, Bar. San Isidro
Municipality Base	

10. Organization

1) Organization chart



2) No. of Personnel

PARANAQUE	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	4	12									4	20
Operation/ Regular				12								12
Collection					21							21
Beatification								225				225
Depot/maint/ Motorpool									2			2
Transfer Station							4					4
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	4	12		12	21		4	225	2		4	284

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres

Current Solid Waste Management(1/4) LGU : Las Pinas

1. General Information

	NSO	MMUTIS
Area (km2)	41.5	41.5
Population	413,000	413086
Population Density(person ('000)/km2)	10.5	10.5
Annual Growth Rate (% p.a.) 1980-1995	7.7	7.7
City / Municipal Budget (mill. Pesos) 1996		
Budget for MSWM (mill. Pesos and %) 1996		

NSO : National Statistic Office , I / R : Inception Report

MMUTIS : Metro Manila Urban Transportation Institution Study

2. Responsible Sectors for MSWM

	MMDA	LGU	Private	Others
Collection (Residential Area)		x		
Collection (Market, Commercial)		x		
Transportation		x		
Street Sweeping		x		
River Cleansing		x		
Maintenance			x	
Operation of individual T.S.				

3. Collection & Transportation

1) Basic Data

Waste Discharge Amount (ton/day)	177.33 ton / day
Waste Collection Amount (ton/day)	155.01 ton / day
Coverage Rate (%)	87.41 %

2) Collection

Collection Coverage Ratio, No. of Contractor and Type and No. of Collection Vehicle by MMDA,LGU and /or Private Contractor

LAS PINAS	Coverage Ratio (%)	No. of Contractor	No. of Collection Vehicle								Total
			Compactor					Dump-Truck			
			C5	C8	C12	C15	Scomp	6W	10W	MDT	
MMDA	0	-									-
LGU	100	-	10	20							30
Contractor	0	0									-
Total	100	0	10	20							30

Current Solid Waste Management(2/4) LGU : Las pinas

■ Collection Time

Type of Collection area	Collection Time				
	0:00	6:00	12:00	18:00	24:00
Main Thoroughfare		5 ◄——► 11			
Barangay			13 ◄——► 18		
(Mopping Collection)		10 —— 11			

■ Collection Frequency

Main Thoroughfare	Daily
Baranbay	Once a week
Commercial Area, Market	Daily

3) **Contract Out System**

Type of Contract	
Term of Contract	
Responsible Sector for Selection of Contractor	
Specification	
Estimation Method of Contract Cost	
Contract System	

4) **Supervision / Management System to Collection Work**

Waste Volume Check System	Issue of 1st trip ticket (Garage) ⟶ Collection ⟶ Volume check (Volume check office - near Ras Pinas T.S.) & issue of 2nd trip ticket ⟶ Las Pinas T.S. ⟶ Collection ⟶ Garage
Monitoring System to Collection activity	6 monitoring staffs (3 motorcycles, 1car) Before collection :check the waste volume discharged request of the extra collection unite After collection : monitoring the cleansing situation

4. **Haulage and Transfer System**

Type of Haulage system	Indirect haulage system by Transfer station
Type of Transfer System	Collective Transfer Station (Las Pinas T.S.)

5. **Maintenance System for Vehicle and Equipment**

Sector	Maintenance Capability		
	None	Major Repair	Miner Repair
LGU	x		
Private Contractors		x	x

Current Solid Waste Management(3/4) LGU : Las Pinas

6. Public Cleansing

1) Street Sweeping

	Main Thoroughfare & Secondary Road
Role Assignment	LGU
Total Length(km)	95
Swept Length (km)	95
Sweeping System	Manual
Frequency	Daily
Working Time	5:00-7:30AM, 3:00-5:00PM (Volunteers)
Monitoring System	Barangay stuffs : 20 staffs(1stuff/Barangay) Coordinator : 25 stuffs (20 Barangay + 5 Main Thoroughfares)
Heaping Point & Container	Road side with Plastic bag

2) River Cleansing

	River
Role Assignment	LGU
Total Length(km)	52
Cleansing Length (km)	52
Cleansing System	Using boat (4 rafts) by manual
Frequency	Daily
Working Time	8 hrs.
Monitoring System	Monitoring activity is done by same collection monitoring staffs every day.
Heaping Point & Container and	River side with plastic bag, Direct loading to open dump truck

7. Intermediate Treatment

Type of Facility	Treatment System
N/A	N_A

8. Final Disposal

Disposal Site	Disposal Amount (ton per day) *
;Carmona Disposal D.C.	154

Disposal amount is estimated based on the disposal volume data accumulated by MMDA.

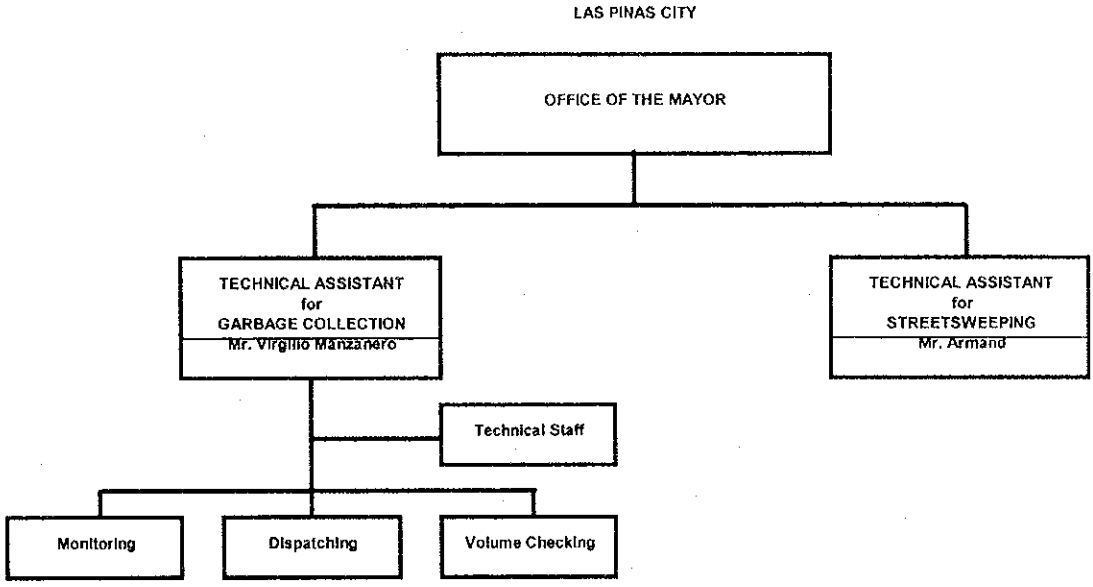
9. Recycling Activity

Community Base	N/A
Baranbay Base	N/A
Municipality Base	N/A

Current Solid Waste Management(4/4) LGU : Las Pinas

10. Organization

1) Organization chart



2) No. of Personnel

LAS PINAS	Category/Type of Employee											Total
	S/T	AD	OS	M/I	D	C	L	SW	E/M	DP	EO	
Administration	2	14										16
Operation/ Regular												
Collection					42	84						126
Beatification								565				565
Depot/maint/ Motorpool									8			8
Transfer Station												
Dumpsite/ Operation												
MMDA back up												
Special Project/ Operations												
Total	2	14			42	84		565	8			715

S/T:Supervisor/TechnicalStaff,AD:Admin.Staff/ClericalStaff,O/S:OperationsOfficer/Operations Staff/Optns.Offr./Oprns.Offr.,M/T:MonitoringStaff/Inspector,D:Draiver,C:Collector,L:Laborer, SW:St.Sweeper,E/M:Engineer/Mechanic/Heavy Eqpt.Optr.,DP:Dispatcher, EO:Env.Enforcers/Othres